

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-03-01

Name

Period

Date

Lesson

Lesson focus

Bioethics debate: research vs risk

Key words and questions

Prepared details and student notes

Essential question
What is today's target?

Debate whether growing and studying dangerous bacteria is worth the risk it carries to researchers and the public. Big idea: How do scientists and society decide when the potential benefits of dangerous research justify the risks it creates?

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- aseptic technique
- culture
- colony
- inhibition
- mutation
- horizontal gene transfer

My notes, examples, and questions

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Cornell Notes - Continued

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Must-know ideas
What should I understand by the end?

- Biosafety levels (BSL-1 through BSL-4) define required containment procedures for different classes of pathogens.
- Dual-use research of concern (DURC) refers to research that could be misused to threaten public health or national security.
- Benefit-risk analysis in research ethics weighs scientific and medical gain against probability and magnitude of harm.

My notes, examples, and questions

Process notes
What happens during class?

- 0-10 min: Read scenario; define biosafety level and dual-use research in notebook
- 10-25 min: Draft CER: claim (proceed or not, and with what safeguards), reason, evidence from the scenario
- 25-40 min: Partner exchange: find someone who weights the risk differently; record their strongest counterpoint
- 40-55 min: Write rebuttal; revise safeguard requirement if the counterpoint identified a real gap
- 55-68 min: Post CER to the discussion board
- 68-80 min: Read two classmates' CERs; leave a one-sentence response to each

My notes, examples, and questions

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Steps and evidence What do I do and turn in?

- Read the scenario: studying superbugs helps treatment but requires growing risky cultures.
- Write your Claim: should this research proceed, and with what safeguards?
- Add a Reason and Evidence weighing benefit against containment risk.
- Trade with a partner who weighs the risk differently and note their point.
- Write a Rebuttal answering it.
- Post your CER and read two classmates' positions on safeguards.

Evidence: CER - Written CER on risky pathogen research: position with specific safeguards, evidence about benefit and containment risk, reasoning, and rebuttal.

My notes, examples, and questions

Checks for understanding How do I know I got it?

- You will be able to argue a position on risky pathogen research.
- You will be able to weigh research benefit against safety risk.
- You will be able to rebut an opposing view.

My notes, examples, and questions

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Cornell Notes - Continued

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Lab or safety notes
What must I handle
carefully?

Supplies:

- Agar plates (or culturing simulation)
- Inoculating loop
- Bunsen burner or sterile single-use loops
- Bacterial sample or broth
- Incubator
- Labeling marker and tape

My notes, examples, and questions

Summary

Today's lesson focused on Bioethics debate: research vs risk. The main target was: Debate whether growing and studying dangerous bacteria is worth the risk it carries to researchers and the public. The evidence of learning is CER: Written CER on risky pathogen research: position with specific safeguards, evidence about benefit and containment risk, reasoning, and rebuttal.. In my own words, the most important idea from today is:

My summary

My final question or connection